

JPW

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Attorney Docket No. 012003-03

PATENT

Group Art Unit: 3644
Examiner: Jordan M. Lofdahl

In re application of:
Ernest L. Baker et al.

Application No. 10/684,858
Filed: October 14, 2003

METHOD TO IMPROVE PERFORATING
EFFECTIVENESS USING A UNIQUE
MULTIPLE POINT INITIATED SHAPED
CHARGE PERFORATOR

Commissioner for Patents
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May 12, 2004

5/12/04
(DATE SIGNED)

Yale S. Finkle
YALE S. FINKLE
REG. NO. 27,547

Dear Sir:

RESPONSE TO DRAWING OBJECTION
AND ELECTION REQUIREMENT

The Office Action mailed April 14, 2004 contains an objection to the drawings and a requirement for election of species. Applicants' responses to the objection and election requirement are set forth below.

The Drawing Objection

The drawings were objected to as failing to comply with 37 CFR 1.84(p)(4) on the grounds that "reference character '14' has been used to designate both the closed back end and an unknown part." A proposed drawing correction or corrected drawings are required to avoid abandonment of the application. It is respectfully submitted, for the reasons enumerated below, that the Examiner's objection is unwarranted and corrected drawings are therefore not required.

Applicants' specification at lines 28-30 on page 7 identifies reference character 14 as the "closed back end" of the metal case 12, which is part of the shaped charge perforator 10 shown in Figures 1-6. Evidently, the Examiner interprets the use of reference number 14 in the upper portion of Figure 1 and on the

right-hand facing V in Figure 3 to identify two separate parts of the perforator. In actuality reference character 14 is used in both these figures to represent the same element, i.e., the closed back end of the metal case 12. The Examiner's misinterpretation of these parts of Figures 1 and 3 is understandable because the part 14 shown in the upper portion of Figure 1 sits between the booster explosive 28 (page 9, lines 11-12) and the main explosive charge 26 (page 9, lines 4-8) and appears to be a separate element as does the right-hand facing V identified by reference character 14 in Figure 3. In actuality these separate appearing elements are part of the closed back end but appear in Figures 1 and 3 as separate elements because of the pathways 20 and 22 that are drilled into the closed back end 14 of metal case 12 as described at lines 10-21 on page 8 of the specification. These pathways are filled with the booster explosive 28, which makes it appear as if there are two separate elements in both figures identified by the same reference character.

The above explanation is made clearer by referring to Figure 2, which shows a front view of the shaped charge perforator 10 with the pathways 20 and 22 indicated by dotted lines. Keeping in mind that Figure 1 is a 90° cutaway along line 1-1 in Figure 2 and that Figure 3 is a cross-sectional elevation view of perforator 10 taken along line 3-3 in Figure 2, it should become clear that the item identified in the upper portion of Figure 1 with reference character 14 and the right-hand facing V in Figure 3 are part of the same element identified as reference character 14 in the bottom portion of Figure 1 and the lower left side of Figure 3. It is the presence of the pathways 20 and 22 that make the closed back end appear as two separate elements.

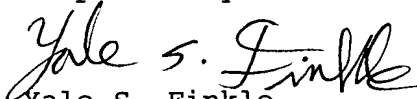
Response to Drawing Objection and Election Requirement
Application No. 10/684,858
Docket No. 012003-03

In light of the above explanation, it is submitted that reference character 14 identifies a single element -- the closed back end of case 12 in perforator 10. Thus, correction of the drawings under threat of abandonment is not required and withdrawal of the rejection is respectfully requested.

The Election Requirement

The Examiner takes the position that the application contains claims to patently distinct species containing two or more subspecies. The Examiner identifies Species A as "shaped charge" containing five subspecies and Species B as "initiation" containing two subspecies. He then requires Applicants to elect a single disclosed subspecies from each species and to identify all claims readable on these subspecies. In view of these requirements, the Applicants provisionally elect (1) Subspecies 1A of Species A identified as "fig. 1-3" and (2) Subspecies 1B of Species B identified as "detonator cord." Claims 1, 2, 3, 4, 5, 10, 12-15, 17, 18-27, 34, and 36 are readable on Subspecies 1A. Claims 1-15, 18, 19, 20, 21, 26, 34 and 36 are readable on Subspecies 1B. In light of these elections, the application should now be in condition for examination.

Respectfully submitted,


Yale S. Finkle
Attorney for Applicants
Registration No. 27,547
(714) 577-2642

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Union Oil Company of California
P. O. Box 7600
Brea, CA 92822-7600